

## APPENDIX B

# COMPARISON OF RESULTS OF THE NATIONAL RECREATION SURVEY AND THE NATIONAL SURVEY OF FISHING AND HUNTING <sup>1</sup>

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Beginning in September 1960, the Bureau of the Census conducted four quarterly national surveys on outdoor recreation activity for the Outdoor Recreation Resources Review Commission. These surveys were designed to identify all recreation occasions in different quarters of the year (vacation, trips, outings, etc.) and to obtain frequency of participation on all types of activities (including fishing and hunting) engaged in on each occasion. The required information for each of the surveys was obtained from separate samples of approximately 4,000 respondents who were personally interviewed about their own outdoor recreation activities during the previous 3-month period, including their participation in fishing and/or hunting.

At the beginning of 1961, the Bureau also conducted a national survey of fishing and hunting, covering the year 1960, at the request of the Fish and Wildlife Service, U.S. Department of the Interior. This survey which was similar to that conducted on this subject in 1955 for the Department of the Interior by Crossley, S-D Surveys, Inc., was designed primarily to measure such subjects as type of fishing and hunting, man-days, expenditures, licenses, and similar details relating to these activities. The sample design involved selecting households on a national basis; within these households a single respondent provided information as to which household member had fished and/or hunted during the preceding 12 months. These persons were then visited to obtain detailed data on the extent of their participation in and their expenditures for their fishing and/or hunting activity during 1960. The detailed information was obtained from the fisherman and/or hunter himself; the indication as to who was a fisherman and/or hunter was obtained from a household respondent. <sup>2/</sup>

A comparison of results obtained from the National Survey of Fishing and Hunting and the first of the national recreation surveys covering June through August 1960—a relatively high period of fishing activity—indicated a smaller number who did any fishing reported in the National Survey of Fishing and Hunting. Results from the second and third national recreation surveys, covering September through November 1960 and December 1960 through February 1961, respectively, revealed the same general pattern for those who hunted. Examination of the differences suggested that the difference in the National Survey of Fishing and Hunting resulted from the inability of this survey to pick up those whose participation was only incidental, that is, those fishing and/or hunting only

one or two occasions, who had no licenses, and who had spent little if anything on the activity.

In order to measure the full extent of this difference, subsamples selected from two of the national recreation surveys were reinterviewed to obtain a measure of annual participation in fishing and hunting. Specifically, two subsamples of approximately 1,500 cases each were selected from the September and December 1960 national recreation surveys. Each of the 3,000 designated respondents was reinterviewed in May 1961 to find out whether he or she had fished and/or hunted at any other time during the 12-month period. Results obtained from the September 1960 subsample (covering the 12-month period from June 1960–May 1961) were used to obtain a measure of annual participation in fishing which was compared with that obtained from the National Survey of Fishing and Hunting. Similarly, the December subsample results (covering the same 12-month period) provided a comparable annual estimate of the number who hunted. Limited data were also obtained from each group on license ownership, approximate days devoted to the activity, and relative level of expenditures.

As indicated, the data collected in the original recreation surveys for each activity (covering the June, July, and August 1960 period for fishing and the September, October, and November 1960 period for hunting) were adjusted to an annual level through the use of the additional information obtained through the followup surveys. In the case of fishing, for example, the annual estimate was obtained by adding to the estimate of fishermen obtained in the September 1960 recreation survey (covering June, July, and August) those who fished during one or more of the remaining quarters of the year, as follows:

Fished during June, July, and August (from the September recreation survey).

Did not fish during June, July, and August (from the September recreation survey).

Fished during September, October, and November (from the followup survey).

Fished during December, January, and February (from the followup survey).

Fished during March, April, and May (from the followup survey).

The results of the reinterview, adjusted to the appropriate controls, indicated that a total of some 50 million persons had either fished or hunted for recreation purposes during the 12-month period, as compared with the estimate of 30,500,000 developed from the National Survey of Fishing and Hunting. Further investigation, however, supported the original hypothesis—namely, that the difference represented, in large part, those whose participation in the activities was only incidental. This was accomplished by deleting from the total obtained through the recreation reinterview those with no licenses and two or fewer days

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<sup>2/</sup>Results of the survey are presented in "National Survey of Fishing and Hunting: 1960," U.S. Department of the Interior, circular 120, September 1960.

participation and less than \$5 of expenditure on the activity, and comparing the results with similarly adjusted figures from the National Survey of Fishing and Hunting. The results of this analysis are summarized below:

On an annual basis, the participation rate for fishing reported by the Interior survey is 19.3 percent, whereas that obtained from the National Recreation Survey (adjusted to an annual level) is 35.2 percent. The comparable rates for hunting are 11.2 percent and 16.7 percent, respectively (table 1).

Table 1. Comparison of unadjusted annual participation rates

	Fish and wildlife survey	Outdoor recreation survey
Fishing.....	19.3	35.2
Hunting.....	11.2	16.7

The differences between the rates, however, narrow considerably when the very incidental participants are excluded from each survey. For example, using a criteria for incidental participants of no licenses, two or fewer days of participation and less than \$5 of expenditure for an activity, the fishing rates become 18 percent for the Interior

survey and between 22 and 25 percent for the recreation survey; the hunting rates, 11 percent and 10 to 12 percent (table 2).

The effect on aggregate days and expenditures of excluding these incidental fishermen and hunters is negligible. Aggregate days of fishing reported in the Interior survey decrease by 0.4 percent, aggregate expenditures by 0.05 percent. Similarly, for hunting, days decrease by 0.3 percent and expenditures by 0.05 percent (table 3).

Table 2. Adjusted annual participation rates <sup>1/</sup>

	Fish and wildlife survey	Outdoor recreation survey
Fishing.....	18.1	22-25
Hunting.....	10.8	10-12

<sup>1/</sup>Adjusted by excluding those with no licenses and two or fewer days participation and less than \$5 expenditure on the activity.

Following a review and discussion of these results, and their implications for publication purposes, it was agreed by all participating groups that the report of the National Survey of Fishing and Hunting would: (1) present the results as collected in the detailed study; (2) include in the introductory statement a reference to the overall number of participants and the source of this estimate; (3) contain an appendix statement explaining in somewhat greater detail the difference between the estimates.

Table 3. Effect of adjustment on aggregate days of participation and aggregate expenditures reported in fish and wildlife survey

	Fishing			Hunting		
	Total unadjusted	Deleted by adjustment		Total unadjusted	Deleted by adjustment	
		Total	Percent		Total	Percent
Aggregate days.....	466,000,000	1,856,000	0.4	193,000,000	667,000	0.3
Aggregate, expenditures.....	\$2,700,000,000	\$1,570,000	.05	\$1,200,000,000	\$614,000	.05